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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, Washington 98101

September 15, 2003

Reply To
Attn Of: ECO-083

Amended Water Quality Certification

CERCLA-
Pacific Sound Resources
Marine Sediment Unit
Mouth of Duwamish River/West Waterway
Elliott Bay, Seattle, Washington

Introduction. This Water Quality Certification (WQC) has been completed in support of remedial work to be conducted at the Pacific Sound Resources Superfund site. The Pacific Sound Resources (PSR) Site is located on the southern shore of Elliott Bay, Seattle, Washington. Specifically, the site lies west of the West Waterway (Duwamish River mouth) at 2801 S.W. Florida Street, Seattle, Washington. The site was used for wood treatment operations from 1909 to 1994, and was separated into two Operable Units for investigation and cleanup purposes. Upland Unit cleanup actions have included demolition of all on-site structures and removal of source material. Cleanup actions for the Marine Sediments Unit (MSU) will include removal (dredging) and containment of contaminants in the aquatic environment including, but not limited to, the confinement through capping of contaminated marine sediments. The dredging/capping actions are expected to be initiated in summer of 2003, with actual in-water construction beginning in fall of 2003 and being completed in non-continuous work phases by mid-February 2006.

Additionally, as a precursor to the sediment capping to be performed by the Environmental Protection Agency (EPA), the Port of Seattle (Port) was asked to remove creosote pilings and other above-water timbers attached to these pilings from the area to be capped. This action is scheduled to begin in July, 2003. The action supports and contributes to planned Remedial Action (in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended [CERCLA]) for PSR. The WQC for pilings removal is located in EPA's site file and copies have been distributed to all affected parties.

A copy of this WQC will be included in EPA's site file as part of the record for this action and provided to the Corps of Engineers, Seattle District, the Port, and all other contractors and subcontractors performing actual in-water work at the PSR site. EPA reserves the right and responsibility to revoke, amend, or revise this WQC at any time.

The Environmental Protection Agency (EPA) is responsible for review of this project to insure compliance with the substantive requirements of the Clean Water Act Section 401. The State of Washington water quality standards (Chapter 173-201 WAC) were drawn on heavily for EPA's evaluation, these standards being normally applicable and used by the State of Washington for Section 401 certification in the absence of a CERCLA action. Elliott Bay is a Class A waterbody per WAC 173-201A. The anti-degradation policy of the State of Washington, in addition to preservation of beneficial uses, is a major factor in our analysis.

Construction Activities.

EPA's ROD selected the remedy of dredging and capping of specific areas of Elliott Bay and the shoreline of the former PSR facility. The U.S. Army Corps of Engineers (Corps), through an interagency agreement with EPA Region 10, was assigned to assist in the design and execute the remedial actions for the PSR MSU. The Corps is the principal author of the PSR Management Guidelines (PSRMG), the key document that links the various actions described in a set of documents designated as the Design Documents. This set of documents collectively describes the methods to assure procedures to implement and document the EPA-selected remedy for the PSR MSU; to assure regulatory process is followed; and to monitor and report the status of the remediated site to EPA, the State of Washington and other stakeholders. For engineering purposes, the MSU cap area was subdivided according to specific site conditions and operational considerations that required different cap designs, cap materials specifications, or construction methods. The Design Documents describe this organization of the site into Remediation Areas (RA), the remedy actions to occur in each RA, sequencing, and the tentative schedule (table 1).

Table 1
Construction Sequencing and Tentative Schedule

Construction Element	Start	Finish
Dredge RA3	9/3/03	10/1/03
RA1 Cap Construction	9/2/03	2/13/04
Extend Longfellow Cr Outfall	10/3/03	2/13/04
RA3 Cap Construction	7/17/04	8/16/04
RA2a Cap Construction	8/17/04	10/1/04
RA5 Cap Construction, Phase I	1/17/04	2/15/05
RA2b Cap Construction	10/4/04	11/1/04
RA4 Cap Construction	11/2/03	2/13/04
RA5 Cap Construction, Phase II	7/17/05	2/13/06

More specific descriptions of the work involved are contained in the Design Documentation located in EPA's site file.

Certification. EPA certifies that the work proposed complies with applicable provisions of Sections 301, 302, 303, 306, and 307 of the Clean Water Act, as amended. This certification is subject to the following conditions:

1. Work in waters (e.g., whatever the activity is) pursuant to this action shall be completed prior to February 15, of any year up until the year 2006 when all work in waters for this action is expected to be completed; thereafter this WQC will expire.

2. Copies of this certification shall be kept on the job site and readily available for reference by EPA, the contractor, and other appropriate federal, state and local government inspectors. EPA retains the jurisdiction to make further modifications to this certification through written amendment if it appears necessary to protect the public interest.

3. Water quality standards (WQS) pertaining to the marine waters of Elliott Bay (Class A) shall apply to this project except in the authorized dilution zone.

A. Dredging. For this activity, the entire water area within 300 feet measured radially from the construction operation (i.e., dredge) is authorized as the dilution zone. If water quality monitoring is required it shall consist of dissolved oxygen, temperature, total suspended solids (TSS) measurements and turbidity observations. Observation reports and water quality data collected within and at the edge of the mixing zone for any reason shall be provided to EPA in a timely manner. At no time within any point of the dilution zone shall dissolved oxygen levels be caused to drop below 3.5 mg/l. Should this occur, all in-water activities should cease immediately and EPA notified. Work shall not recommence until dissolved oxygen levels have returned to ambient levels and approval given by EPA.

B. Capping. For this activity, the entire water area within 600 feet measured radially from the construction operation (i.e., dredge/barge) is authorized as the dilution zone. If water quality monitoring is required it shall consist of dissolved oxygen, temperature, total suspended solids (TSS) measurements and turbidity observations. Observation reports and water quality data collected within and at the edge of the mixing zone for any reason shall be provided to EPA in a timely manner. At no time within any point of the dilution zone shall dissolved oxygen levels be caused to drop below 3.5 mg/l. Should this occur, all in-water activities should cease immediately and EPA notified. Work shall not recommence until dissolved oxygen levels have returned to ambient levels and approval given by EPA.

Precautionary Note: Overlapping Mixing Zones. If more than one construction activity, either from this project or other construction/remediation projects, occurs at the same time, mixing zones may overlap. *In this situation, EPA should be consulted immediately to determine an appropriate monitoring strategy and to make necessary adjustments in definition of mixing zones while the multiple activities are occurring in the waterway.*

4. Care shall be taken to prevent any petroleum products or other deleterious or toxic materials from entering the water as a result of any activity. If a significant oil sheen is observed in the vicinity of the operation, immediate action must be taken to modify the activity and prevent further degradation, or the activity shall cease. EPA will be notified of the condition immediately.

5. If distressed or dying fish are observed in the vicinity of the operation, immediate action

must be taken to modify the activity and prevent further degradation, or the activity shall cease. EPA will be notified of the condition. Dead fish should be collected and appropriately preserved in the event that post-mortem tests or evaluations are necessary. EPA reserved the right to coordinate with Federal, State, and Tribal fish experts and require such tests.

6. Floatable debris introduced into Elliott Bay by the activities will be collected and suitably disposed at an upland location.

Monitoring Activities and Requirements. The overall objective of monitoring water quality is to assess compliance with WQS during dredging and cap construction operations. The specific objectives are to ensure dissolved oxygen concentrations do not fall below prescribed minimums, construction activities are accomplished in a manner ensuring protection of the environment, and to document constituents of interest.

The monitoring approach stipulated by this WQC is a tiered one, with monitoring requirements premised on the detected constituents of interest which relates to the degree of risk associated with dredging. The monitoring requirements are initially severe in order to detect potentially adverse effects so that appropriate and necessary corrective actions may be taken early in the dredging operation. An exceedence of water quality standards could result in corrective action depending upon the degree of the exceedence and/or the risk posed by the exceedence to beneficial uses of the water body. Generally, EPA will use these data for decisions on curtailing or continuing the monitoring, adjusting sampling locations modifying dredging operations, or recalculating a dilution zone.

GENERAL

1. Specified conventional parameters will be monitored in the vicinity of each dredging and cap construction operation as specified. All results will be faxed to EPA as soon as they become available (Attn. John Malek, FAX: (206) 553-1775).

2. Daily monitoring will involve at least two collection times that correspond with (1) slack and (2) strong ebb and/or flood tidal conditions for the first three days of each separable construction operation, e.g., first lift of cap, second lift, etc. After 3 days of monitoring, if no water quality problems have arisen, monitoring intensity will be reduced to weekly or eliminated at the direction of EPA. Observation of persistent turbidity plumes from any operation will trigger an immediate monitoring event.

3. All monitoring will be conducted (1) at the dilution zone boundary; (2) at a mid-point within the dilution zone, and (3) at a reference location(s) outside the dilution zone and potentially outside of the waterway (***only if a reference approach is used***).

4. At each dredging monitoring location, water samples shall be taken at the near surface (approximately 3.0 feet below waterline), mid-depth, and near bottom (approximately 3.0 feet above the bottom). Samples shall be adjusted within the depth range to target the turbidity plume, which *may be, but is not required to be,* tracked hydro-acoustically. If no distinct turbidity plume can be identified, water samples shall be taken in the area

immediately down current of the dominant flow (tidal or river-influenced) and shall be obtained at the standard depths (i.e., surface, mid-depth, and near bottom).

5. When conventional monitoring is required, the parameters include:

   (1) Dissolved Oxygen (DO)
   (2) Temperature
   (3) Total Suspended Solids (TSS)
   (4) Turbidity

   If DO is determined by a field instrument rather than the Winkler method, calibration of the instrument and probe shall be performed across the range of DO levels likely to occur in the marine waters. Documentation of calibrations for DO or any other field instruments used for water quality measurements shall be included in the report sent to EPA.

6. The point of compliance with WQS will be those stations at the mixing zone boundary. Within the mixing zone, the Class standard for turbidity and temperature are waived, as are the acute criteria applicable to any identified chemicals-of-concern; none are identified for these actions. The Class standard for dissolved oxygen may be exceeded but shall not be caused to drop below 3.5 mg/l. All water quality standards are to be met outside of the authorized mixing zones. This waiver of specified standards within the mixing zones is intended for brief periods of time (such as a few hours) and is not an authorization to exceed those standards for the entire duration of construction. In no case does the waiver authorize degradation of water quality that significantly interferes with or becomes injurious to characteristic water uses or causes long-term harm to Elliott Bay.

7. ***Compliance standards for all dredging activities are the Marine Acute State of Washington water quality standards (Chapter 173-201 WAC).*** For conditions when the WQS are exceeded by the ambient water quality concentrations, the ambient water quality concentrations (as determined according to procedures and design approved by EPA) will serve as the performance criteria as designated in this document. Ambient values shall be reassessed based on re-sampling of the reference locations, during dredging operations as required in the above specification.

MONITORING LOCATIONS AND FREQUENCY.

1. Reference. (*A reference approach to water quality determinations may be, but is not required to be, used.*) Measured monitoring values may be compared to an ambient background condition. If this approach is followed, at least two days prior to initiating construction activities, ambient water quality will be determined for the conventional parameters. The ambient values can be determined by collecting and analyzing water samples collected at no less than three (3) stations in the area of the waterways but outside of the immediate construction areas. No more than two stations may be collected outside of the mouth of the waterway in Elliott Bay proper. At each station, three samples (top, bottom and mid-depth) must be collected following the requirements of

paragraphs 2 and 4 in the General section preceding. At least two rounds of sampling must be conducted. Results can be averaged for each strata (i.e., top, bottom, mid-) to determine ambient. Station locations and the individual sample data will be provided to EPA in addition to the averaged ambient values. Periodic reconfirmation of the ambient values can be conducted with advanced notification to EPA.

2. The contractor is responsible for preparation of a water quality monitoring plan that will specify locations and frequency for monitoring for each phase of dredging and capping activities for each RA. At the minimum, at each station, three samples (top, bottom and mid-depth) must be collected following the requirements of paragraphs 2 and 4 in the General section preceding. In general, the greater concern is for water quality effects to occur during dredging of the contaminated sediments. Four stations will be occupied for water quality monitoring. Two down-current (used relatively rather than absolutely) stations and one up-current station will be located at the mixing zone perimeter (300 feet). A random mid-point station (150 feet) will be occupied. Generally, the mid-point station should be located in proximity with the two down-current stations. At slack tides, the three perimeter stations can be randomly distributed along the compliance perimeter. Monitoring will occur at least twice daily per General paragraph 2 when dredging is occurring on at least an 8-hour shift for the first 3 days. Monitoring is not required when the dredge is shut down. If this intense monitoring shows no water quality exceedence, monitoring may be reduced to once daily. If after another 3 days of monitoring, no water quality exceedence occur, monitoring may be further reduced or terminated at the discretion of EPA.

   Capping efforts will necessarily suspend sediment particles throughout the water column. The impact of the initial capping material on the contaminated substrate is of most concern and a flexible and adaptive management approach to cap placement is anticipated. The monitoring plan should be designed to gather information on mixing and resuspension of the underlying contaminated sediment for the initial lift (i.e., until approximately a one foot cap layer develops) at each RA. Dissolved oxygen levels should be periodically (weekly) checked during active cap placement *near the bottom*, but are otherwise not required. Once an area (the entire RA or subareas depending on placement scenarios) has achieved a initial one foot of cover, no further compliance monitoring is required in that area. Visual observation monitoring will occur daily for persistent turbidity plumes. Evidence of problems with cap placement (i.e., through other monitoring actions) may trigger further water quality monitoring requirements.

Operational Response. If construction operations are found not to be in compliance with the provisions of this certification, or result in conditions causing distressed or dying fish, the operator shall immediately take the following actions:

1) Cease operations at the location of the violation.

2) Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage. EPA expects that when water quality problems with the conventional constituents are identified during monitoring, new

samples will be collected ***immediately*** using recalibrated instruments or more precise measurement methods to confirm the initial indication. Regardless of whether the second sample confirms the initial measurement, EPA will be notified of the instance. If the second sample does not confirm the initial measurement, construction may recommence with a third set of samples collected within 45 minutes of restart. Indications of a water quality problem in this third series will immediately trigger construction shut-down and notification to EPA. Construction will not be recommenced until specifically approved by EPA. It is strongly recommended that additional monitoring be initiated to determine the recovery time and attempt to determine the source of the problem.

3) In the event of finding distressed or dying fish, the operator shall collect fish specimens and water samples in the affected area and, within the first hour of such conditions, have the water samples analyzed for dissolved oxygen and total sulfides. EPA may require further such sampling and analyses before allowing the work to resume.

Notification. EPA shall be notified 5 days prior to initiation of construction and immediately upon any exceedence or failure to comply with conditions of this WQC. Copies of any monitoring reports will be provided to EPA in a timely fashion. Contact: John Malek, Sediment Management Program, at voice (206) 553-1286, or fax (206) 553-1775; Address: 1200 Sixth Ave., ECO-083, Seattle, Washington, 98101, E-mail: malek.john@epa.gov.

PREPARED AND APPROVED BY:

John Malek — 15 Sept 2003

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Sediment Management Program
Office of Ecosystems and Communities

Date

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